MAR 05 1986

MEMORANDUM FOR: Frank J. Miraglia, Director
Division of PWR Licensing-B, NRR

FROM: Dennis F. Kirsch, Director
Division of Reactor Safety and Projects, Region V

SUBJECT: ARIZONA PUBLIC SERVICE COMPANY, PALO VERDE UNIT 2,
DOCKET NO. 50-529, STATUS OF FACILITY COMPLETION

This memorandum is forwarded to provide you information on the preparedness for full power licensing of Palo Verde Unit 2. Enclosures 1 through 4 include items requiring inspection and resolution before Region V can recommend a full power operating license. The licensee estimates an initial criticality date of March 22, 1986, with completion of the low power testing program a few days later. Region V considers this time frame to be realistic for a full power licensing decision.

If you have any questions please contact me or Chris Sorensen of my staff.

D. F. Kirsch, Director
Division of Reactor Safety and Projects
Region V

Enclosures:
1. Open Items Including Allegations and License Conditions
2. Preoperational and Acceptance Testing Status
3. Construction Status
4. Status of Inspections Required by MC-2512, MC-2513, MC-2514

cc:
J. Taylor, IE
L. Miller, RV
C. Sorensen, RV
E. Licitra, NRR
G. Knighton, NRR

B/11

86-100

MAR 05 1986

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cc:
J. Taylor, IE
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C. Sorensen, RV
E. Licitra, NRR
G. Knighton, NRR

RV				
CSorensen:dh	LMiller	AChaffee	DKirsch	RScarano
3/3/86	3/3/86	~~3/~~/86 2/21	~~3/~~/86 2/21	3/ /86

Enclosure 1

Open Items Including Allegations and License Conditions

License Conditions

The following items from Attachment 1 to the Unit 2 operating license will be addressed and closed by Region V prior to issuance of a full power license.

1) APS shall test Reactor Coolant Gas Vent Valve 2J-RCB-HV-108 and demonstrate its operability during Mode 3 prior to initial entry into Mode 2.

2) Prior to initial criticality of Unit 2, APS shall:

   a. Evaluate the effectiveness of the changes concerning item 6 of Attachment 1 to the operating license.

   b. If the results of this evaluation determine that significant deficiencies still exist, establish an action plan to provide adequate security communications, including interim measures.

The following license condition from Attachment 1 will not be closed until after issuance of the full power operating license. The license condition is not required to be completed until June 30, 1986. This is because the licensee will not have implemented an operable Radiation Monitoring System prior to fuel load.

1) With respect to the Radiation Monitoring System, APS shall perform compensatory measures, complete testing and make operable all elements of the system in accordance with the schedule and commitments presented in ANPP Letter 34129 dated November 29, 1985.

Most of the elements of the system will be made operable in June of 1986 or earlier. This item includes the last portion of the MC-2513 program remaining to be inspected.

Allegations

(1) The following allegations assigned to Region V are currently open and generally affect all three units. Initial examination of these allegations by Region V resulted in the conclusion that none of the issues are of sufficient importance to preclude issuance of the full power license. Even so, these allegations are scheduled to be closed by Region V prior to March 22, 1986.

RV-85-A-032	QA hotline investigation mishandled and safety concern over radiation monitoring systems.
RV-85-A-041	Fire protection program, implementation program.
RV-85-A-058	Improper electrical work alleged by local reporter.
RV-85-A-067	Electricians unqualified to do work.

(2) The following allegations are currently being addressed:

RV-84-A-087	(OI) Alcohol and drug abuse
RV-86-A-004	Security force firearms qualifications.
RV-86-A-009	Appendix R concerns
RV-86-A-012	EERs are not being tracked.
RV-86-A-013	Electricians not properly trained and drug abuse.

Open Items

Violation 85-14-01	New fuel racks not procured in accordance with requirements. The licensee has not completed corrective action.
Unresolved item 85-10-01	Seismic separation criteria were not included in discipline design documents.
Unresolved item 85-40-01	Scheduling of surveillance tests may not be consistent with controlling procedure. The licensee is revising certain surveillance tests that will resolve this item. This effort will take approximately 3 more months.

None of the above open and unresolved items are of sufficient importance to preclude issuance of a full power operating license.

Construction Deficiency Reports

DER 85-39 Insufficient hardness of bolts from Southern Bolt.

Region V has scheduled final inspection and closure of this DER prior to April 5, 1986.

TMI Action Plan Items

The following full power TMI Action Plan Items are open for Unit 2 and will be addressed by Region V prior to issuance of a full power license.

(1)	I.C.7	NSSS Vendor Review of Procedures.
	I.C.8	Pilot Monitoring of Selected Emergency Procedures.
	I.G.1	Training During Low Power Testing.
	II.E.3.1	Emergency Power for Pressurizer Heaters.
	II.F.1	Accident Monitoring.
	II.F.2	Instrumentation for Detection of Inadequate Core Cooling.
	III.D.1.1	Primary Coolant Outside Containment.
(2)	III.A.1.2	Upgrade of Emergency Support Facilities is scheduled for inspection in April 1986.
(3)	II.B.3	PASS and II.F.1.1 and II.F.1.2A, B, C may not be inspected prior to issuance of a full power license.

LERs

The following LERs will be addressed for safety significance by Region V prior to issuance of a full power license.

85-02	ESF Actuation while Troubleshooting a Radiation Monitoring Unit.
85-96 (Units 1&2)	Unanalyzed Fire Areas Due to Engineering Oversight.
85-06	ESF Actuation Due to Operator Error.

Enclosure 2

Testing Programs

The following preoperational tests have not been completed, as of March 3, 1986:

91PE-2LR02	Liquid Radwaste Evaporator Test
92PE-2QF06	In Plant Communications (Safety Frequency/Radio Frequency)
92PE-2SB20	DNBR Calculator to PMS Data Link
92PE-2SB15	Core Operating Limit Supervisory System (COLSS) Test
92PE-2SQ02	Post-Accident Radiation Monitor
92PE-2SQ03	Digital Radiation Monitoring System
92PE-2SQ04	Safety-Related Radiation Monitoring
73HF-2ZZ11	Pressurizer/Reactor Vent System
91PE-2SS02	Gas Analyzer Test

The status of test procedures to be used in the startup test program for Unit 2 is as follows:

1) All post-core hot functional test procedures have been approved.

2) The initial criticality test procedure has been approved.

3) Low power test procedures are currently in the licensee's approval cycle.

4) Approximately 50% of the test procedures to be used for the power ascension phase have been approved.

Enclosure 3

Construction Status

1. The licensee's punchlist contained approximately 62 items, as of March 3, 1986, to be closed prior to initial criticality. Region V will review the punchlist to ensure that items are being properly dispositioned.

2. All subsystems for safety-related and important to safety systems have been accepted by operations.

Enclosure 4

Status of Inspection Program

1. MC-2512 Program

   All Priority 1 modules are complete.

2. MC-2513 Program

   Complete with the exception of the radiation monitoring areas not completed by the licensee, as discussed in Enclosure 1.

3. MC-2514 Program

   This program is current. Initial fuel loading was witnessed with no violations or deviations identified. Further inspection under this program awaits licensee action. The startup test procedures for Unit 2 are essentially the same as those used in Unit 1.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION V
1450 MARIA LANE, SUITE 210
WALNUT CREEK, CALIFORNIA 94596

APR 17 1986

MEMORANDUM FOR: Harold R. Denton, Director
Office of Nuclear Reactor Regulation

FROM: J. B. Martin, Regional Administrator
Region V

SUBJECT: PALO VERDE NUCLEAR GENERATING STATION UNIT 2 OPERATIONAL READINESS REPORT (MC 94300)

This letter transmits the final Region V report summarizing the readiness of Palo Verde Unit 2 for issuance of a full power operating license. Region V recommends the issuance of a full power operating license for Palo Verde 2, subject to the conditions in Enclosure 1, and any other conditions which seem appropriate to NRR.

This recommendation presumes the satisfactory completion of required construction and preoperational testing by the licensee. The licensee has committed to complete these.

for J. B. Martin
Regional Administrator

Enclosure:
As stated

cc w/enclosure:
J. Taylor, IE
J.Davis, NMSS
H. Thompson, NRR
T. Novak, NRR
G. Knighton, NRR

8604220105 8/12
4pp

Enclosure 1

Open Items Including Allegations and License Conditions

License Conditions

The following item from Attachment 1 to the Unit 2 operating license will be addressed and closed by Region V prior to issuance of a full power license:

"1) Prior to initial criticality of Unit 2, APS shall:

a. Evaluate the effectiveness of the changes concerning Item 6 of Attachment 1 to the operating license.

b. If the results of this evaluation determine that significant deficiencies still exist, establish an action plan to provide adequate security communications, including interim measures."

The following license condition from Attachment 1 will not be closed until after issuance of the full power operating license. The license condition is not required to be completed until June 30, 1986. This is because the licensee will not have fully implemented the Radiation Monitoring System until June 30, 1986.

"1) With respect to the Radiation Monitoring System, APS shall perform compensatory measures, complete testing and make operable all elements of the system in accordance with the schedule and commitments presented in ANPP Letter 34129 dated November 29, 1985."

The following license condition from Attachment 2 may not be completed prior to issuance of the full power operating license and it may, therefore, be appropriate to place the same condition in the full power license.

"By April 30, 1985, the Safety Parameter Display System (SPDS) shall be ready for operation. The system shall not be used by the operators for accident evaluation until the NRC staff has approved its use."

Allegations

The following allegations assigned to Region V are currently open for Unit 2. Examination of these allegations by Region V has not yet developed any issues of sufficient importance to preclude issuance of the full power operating license. The current status of each open allegation is indicated below.

RV-85-A-032 QA hotline investigation mishandled, and safety concerns over radiation monitoring system operability - An extensive licensee investigation of the allegation is completed, and partially substantiated the allegations. Regional inspection is in progress, and the preliminary conclusion is that the licensee investigation and corrective action was adequate.

RV-86-A-013 Electricians not properly trained, and drug abuse - The licensee investigation has partially substantiated the allegation. The regional inspection is in progress, and the preliminary conclusion is that the licensee's corrective action was adequate.

RV-86-A-019 Unauthorized fire door modifications - The licensee investigation has partially substantiated the allegation. Compensatory fire patrols have been established until engineering review of all nonconforming fire doors are properly dispositioned by the licensee. Regional inspection is in progress, and the preliminary conclusion is that licensee corrective action was adequate.

RV-86-A-020 Voids in foamed fire barrier penetrations - Regional inspection is in progress; the preliminary conclusion was that any voiding which may have occurred was limited to a few locations where a previously foamed penetration required rework. No significant degradation of fire protection is apparent to date.

RV-86-A-021 Procedural violations and management schedular pressure - Regional inspection is in progress; the preliminary conclusion partially substantiated allegation. Safety significance of procedural violations appears minor. The significance of management pressure is still under review.

Significant Open Enforcement Items

An enforcement conference related to security issues was conducted on April 10, 1986.

None of the pending enforcement action appears significant enough to preclude issuance of a full power operating license.

Construction Deficiency Reports

One construction deficiency report is open, and under review by NRR for resolution prior to full power licensing.

DER 86-14 Cracked Feedwater Pipe Support

TMI Action Plan Items

All TMI Action Plan Items required to be completed prior to full power licensing for Unit 2 have been completed and reviewed by Region V with the exception of:

III.D.1.1 Primary Coolant Outside Containment: The licensee has not yet completed the initial leak tests for certain components associated with the Post Accident Sampling System (PASS).

I.D.2 Safety Parameter Display System - as noted in the "License Conditions" section, this item, due April 30, is not complete.

II.B.3 Post Accident Sampling System. The system is installed but has not yet been preoperationally tested. Preoperational tests are scheduled to begin April 16, 1986.

Licensee Event Reports (LERs)

All licensee event reports submitted by the licensee have been reviewed for safety significance. Based on a review of the reports, Region V concludes that none of the LERs are significant enough to preclude issuance of a full power operating license.

Testing Programs

The following preoperational tests were not completed, as of April 15, 1986:

91	PE-2LR02	Liquid Radwaste Evaporator Test
92	PE-2SB20	DNBR Calculator to PMS Data Link
73	PE-2SQ02	Post-Accident Radiation Monitor
73	PE-2SQ03	Digital Radiation Monitoring System
91	PE-2SS02	Gas Analyzer Test

All of these tests have been started, but not completed or reviewed by Region V.

All post-core hot functional, initial criticality, and low power testing procedures have been approved by the licensee. Approximately 70% of the test procedures to be used for power ascension testing have been approved. The remainder are expected, by the licensee, to be completed by early May, prior to their need.

Construction Status

All safety related and important to safety systems have been accepted by operations. As of April 16, 1986, the licensee's construction "punchlist" contained approximately ten items which the licensee intends to complete prior to initial criticality.

Inspection Program Status

1. MC 2512 (Construction) Program

   The program has been completed.

2. MC 2513 (Preoperational) Program

   The program has been completed, with the exception of the radiation monitoring areas not yet completed by the licensee, as discussed in the "License Conditions" section.

3. MC 2514 (Startup) Program

   This program is up to date. Initial fuel loading was witnessed by Region V with no violations or deviations identified.

APR 17 1986

MEMORANDUM FOR: Harold R. Denton, Director
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FROM: J. B. Martin, Regional Administrator
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This recommendation presumes the satisfactory completion of required construction and preoperational testing by the licensee. The licensee has committed to complete these.

Original signed
J. B. Martin
Regional Administrator

Enclosure:
As stated

cc w/enclosure:
J. Taylor, IE
J.Davis, NMSS
H. Thompson, NRR
T. Novak, NRR
G. Knighton, NRR

bcc w/enclosure:
RSB/Document Control Desk (RIDS)
G. Cook
B. Faulkenberry
J. Martin
Resident Inspector
Project Inspector

B/13

~~8604220105~~
4PP

86-191

Enclosure 1

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUN 18 1986

Docket No.: 50-529

LICENSEE: Arizona Public Service Company

FACILITY: Palo Verde Unit 2

SUBJECT: SUMMARY OF MANAGEMENT MEETING

A management meeting was held on March 6, 1986 in Phoenix, Arizona with representatives of the licensee. The purpose of the meeting was to determine the readiness status of Palo Verde Unit 2 for full power licensing. On the previous afternoon of March 5, 1986, a tour was conducted of the Unit 2 facility, including the auxiliary building, control room, and specific systems and components (e.g. PASS, auxiliary feedwater, auxiliary pressurizer spray, SPDS and safety injection systems). The tour also included the onsite plant specific simulator.

Attendees for the March 6, 1986 meeting are shown on Enclosure 1. Enclosure 2 is a copy of the agenda and viewgraphs used during the meeting. The meeting is summarized as follows.

Summary

Several opening remarks were made by the NRC which included the following points:

- The Palo Verde Unit 2 facility looked clean and ready. The target for operations should be excellence.
- APS has demonstrated strengths in design and construction activities.
- Overall operating experience at the APS corporate level has improved and should improve further.
- Problems have occurred at Palo Verde Unit 1 for which resolution was slow.

The licensee's presentation followed the agenda and the viewgraphs (Enclosure 2). In response to questions, the following additional information was provided:

- LADWP is now a co-owner on all three Palo Verde Units. APS will submit a letter confirming this ownership.

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° The APS Board of Directors is kept advised of Palo Verde's performance and needs. Also, the co-owners are kept advised through their participation in various management and technical committees for Palo Verde.

° APS is planning on hiring an assistant VP with nuclear operating experience.

° The power ascension program for Unit 2 is projected to be shorter in duration based on Unit 1 experience.

In conclusion, the NRC stated that Palo Verde Unit 2 looked ready for operation.

E. A. Licitra, Project Manager
PWR Project Directorate No. 7
Division of PWR Licensing-B

Enclosures:
As stated

cc: See next page

Mr. E. E. Van Brunt, Jr.
Arizona Nuclear Power Project

Palo Verde

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Mr. Charles B. Brinkman, Manager
Washington Nuclear Operations
Combustion Engineering, Inc.
7910 Woodmont Avenue Suite 1310
Bethesda, Maryland 20814

Mr. Ron Rayner
P. O. Box 1509
Goodyear, AZ 85338

Enclosure 1

Palo Verde Unit 2 Management Meeting
March 6, 1986

Attendees	Affiliation
Manny Licitra	RC/PWR-B/PBD-7
Lynn Kelly	NRC/PWR-B/PBD-6
George W. Knighton	NRC/PWR-B/PBD-7
Frank J. Miraglia	NRC/PWR-B
Jesse L. Crews	NRC/Region V
Ed Jordan	NRC/IE/DEPER
Arthur Gehr	Snell & Wilmer
Edwin E. Van Brunt, Jr.	ANPP
Jerry G. Haynes	ANPP
Suzanne Black	NRC/NRR/PPAS
Joe Bynum	ANPP/PVNGS
Darrell Eisenhut	NRR/DEP/DIR
L. B. Marsh	NRR/PWR-B/RSB
Dennis Crutchfield	NRR/PWR-B
Charles Miller	NRC/NRR/PWR-B
Mike Jones	ANPP
Brad Albert	ANPP
Terry Quan	ANPP
Bill Quinn	ANPP
Dan Canady	ANPP
Victor Dricks	The Phoenix Gazette
Roy Zimmerman	NRC/Region V
G. Fiorelli	NRC/Region V
W. E. Ide	ANPP
R. M. Butler	ANPP
J. Vorees	ANPP

AGENDA
UNIT 2 OPERATION READINESS MEETING
MARCH 6, 1986

OPENING REMARKS

NRC
E.E. VAN BRUNT, JR.
EXECUTIVE VICE PRESIDENT
ANPP

I. ANPP ORGANIZATION AND EXPERIENCE -

J.G. HAYNES
VICE PRESIDENT
NUCLEAR PRODUCTION

II. OPERATING EXPERIENCE ON PALO VERDE UNIT 1 -

J.R. BYNUM
PLANT MANAGER

- OVERALL PLANT/STAFF PERFORMANCE
- COMPLIANCE
  - NUMBER AND EVALUATION OF LERs
- EVALUATION OF UNEXPECTED EVENTS -
  - AUXILIARY PRESSURIZER SPRAY SYSTEM AND CHARGING PUMPS
  - MULTIPLEXER AND LOAD SEQUENCER

III. PALO VERDE UNIT 2 READINESS FOR POWER ASCENSION -

J. R. BYNUM
PLANT MANAGER

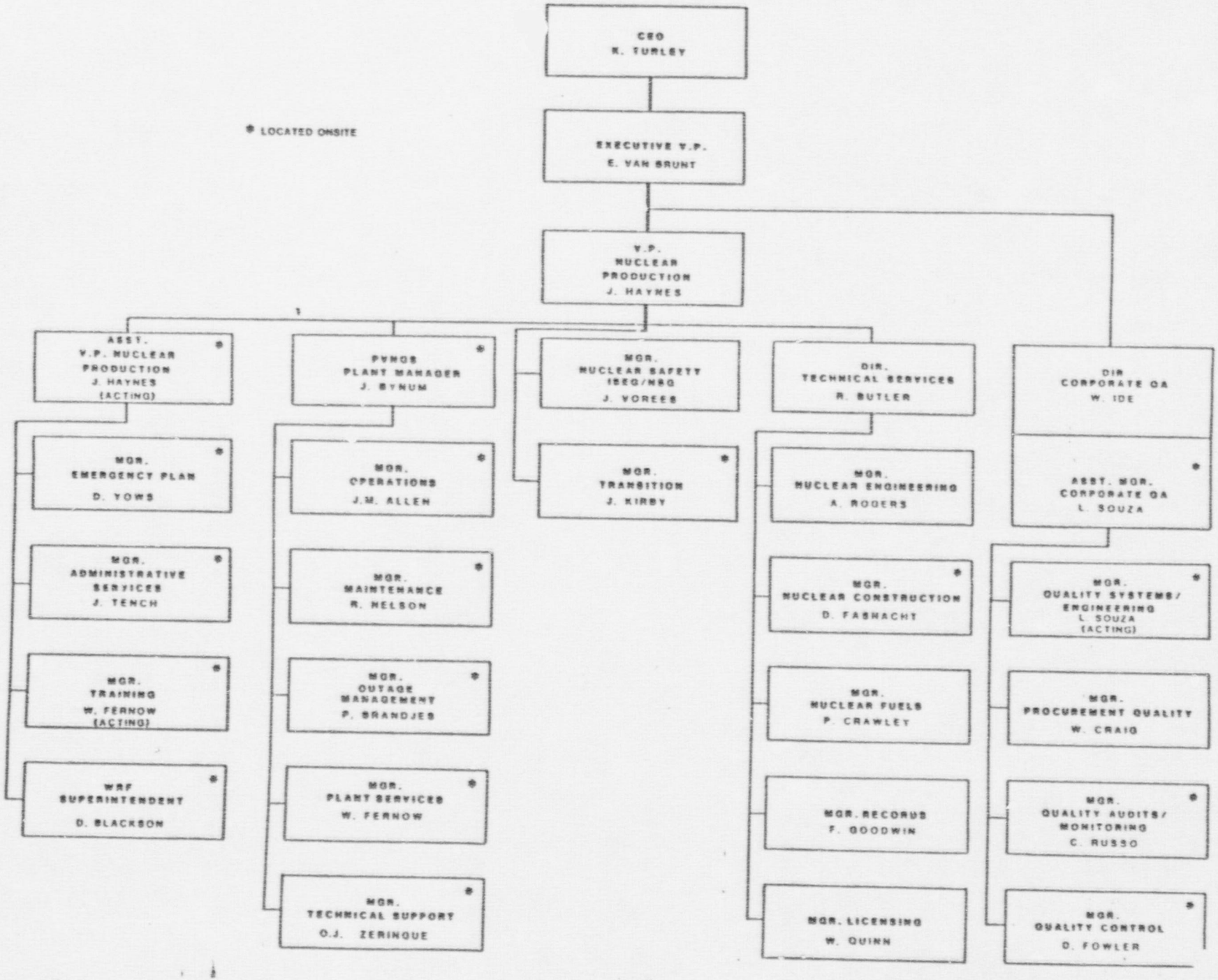
- EVALUATION OF POST FUEL LOAD ACTIVITIES
- POWER ASCENSION SCHEDULE
- DIFFERENCES BETWEEN UNIT 1 AND UNIT 2
- PLANT STAFFING

03/06/86

I. ANPP ORGANIZATION AND EXPERIENCE

JGH
03/06/86

ANPP ORGANIZATION



PERSONNEL/ORGANIZATION ENHANCEMENTS SINCE UNIT 1 LICENSE

- ADDED - VICE PRESIDENT, NUCLEAR PRODUCTION
- ADDED - DIRECTOR, TECHNICAL SERVICES
- RESTRUCTURED - ASSISTANT VICE PRESIDENT NUCELAR PRODUCTION
- ADDED - MANAGER, COMPLIANCE
- ADDED - NUCLEAR ENGINEERING PRODUCTION ENGINEERING MANAGER
- ADDED - MANAGER, OUTAGE MANAGEMENT
- ADDED - ADVISORS

JGH
03/06/86

II. OPERATING EXPERIENCE ON PALO VERDE UNIT 1

JRB
03/06/86

ANPP UNIT ONE

- COMPLETION OF POWER ASCENSION TEST PROGRAM

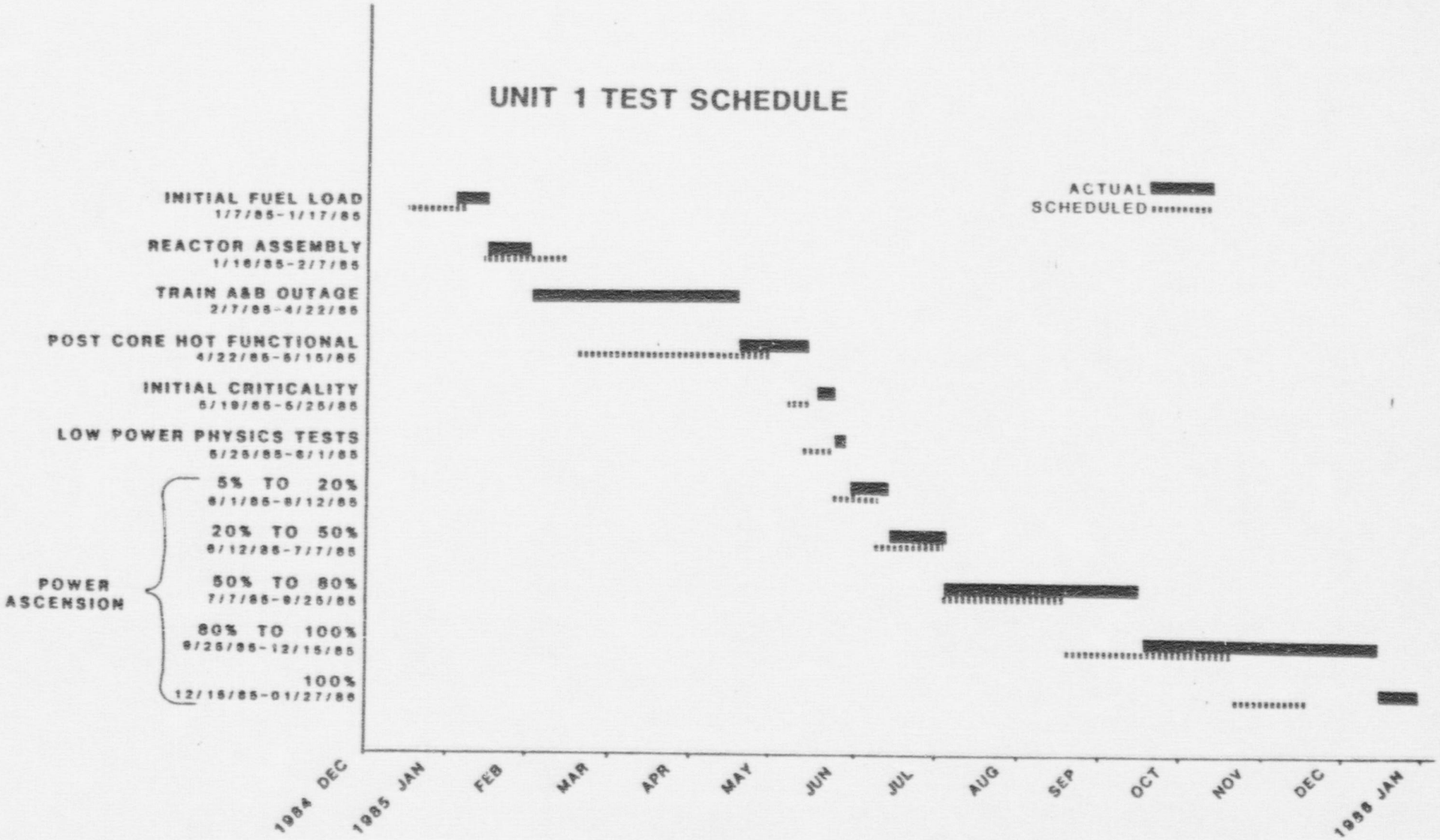
  JANUARY 25, 1986

- CURRENT STATUS

  99% POWER SINCE FEBRUARY 10, 1986

  PLANNED OUTAGE MARCH 7, 1986
  (45-60 DAYS)

JRB
03/06/86


UNIT 1 TEST SCHEDULE
ACTUAL
SCHEDULED
INITIAL FUEL LOAD
1/7/85-1/17/85
REACTOR ASSEMBLY
1/16/85-2/7/85
TRAIN A&B OUTAGE
2/7/85-4/22/85
POST CORE HOT FUNCTIONAL
4/22/85-5/15/85
INITIAL CRITICALITY
5/19/85-5/25/85
LOW POWER PHYSICS TESTS
5/25/85-6/1/85
POWER ASCENSION
5% TO 20%
6/1/85-6/12/85
20% TO 50%
6/12/85-7/7/85
50% TO 80%
7/7/85-8/25/85
80% TO 100%
8/25/85-12/15/85
100%
12/15/85-01/27/86
1984 DEC
1985 JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
1986 JAN

REACTOR TRIP SUMMARY OF RECENT PLANT STARTUPS - FUEL LOAD TO COMMERCIAL OPERATION

PLANT	PLANNED TRIPS	UNPLANNED TRIPS	TOTAL
PVNGS 1	3	10	13
GRAND GULF	5	17	22
WPPSS 2	5	21	26
LA SALLE 1	5	25	30
WATERFORD 3	4	19	23
SONGS 2	12	27	39
BYRON 1	4	23	27
SONGS 3	3	21	24
SUSQUEHANNA 1	6	13	19
SUSQUEHANNA 2	7	5	12
DIABLO CANYON 1	2	9	11
CATAWBA	3	9	12
WOLF CREEK	2	12	14
CALLAWAY	4	15	19
McGUIRE 2	4	14	18
INDUSTRY AVERAGE	4.6	16.0	20.6

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SUMMARY OF UNPLANNED REACTOR TRIPS BY ROOT CAUSE

PLANT	DUE TO DESIGN DEFICIENCIES	DUE TO PERSONNEL ERROR	DUE TO COMPONENT FAILURE/ PROCEDURAL ERROR	TOTAL
PVNGS 1	5	1	4*	10
WPPSS 2	8	8	5	21
WATERFORD 3	7	4	8	19
BYRON 1	5	8	10	23

*No PVNGS 1 trips due to procedural error.

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EVALUATION OF UNPLANNED TRIPS

Reactor Trip	Date	Root Cause
#1	06/14/85	EQUIPMENT FAILURE
#2	07/01/85	EQUIPMENT FAILURE
#3	07/17/85	EQUIPMENT FAILURE
#4	09/12/85	DESIGN DEFICIENCY
#5	10/03/85	DESIGN DEFICIENCY
#6	10/07/85	DESIGN DEFICIENCY
#7	10/24/85	DESIGN DEFICIENCY
#8	12/09/85	EQUIPMENT FAILURE
#9	12/16/85	DESIGN DEFICIENCY
#10	12/20/85	PERSONNEL ERROR/ EQUIPMENT FAILURE

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1985 LER STATISTICS

- UNIT 1 - 93 TOTAL
  - 88 REQUIRED
  - 5 VOLUNTARY
- UNIT 2 - 5 TOTAL AND REQUIRED

(O.L. ISSUED DECEMBER 9, 1985)

- ROOT CAUSE - UNIT 1 LER's
  - PERSONNEL ERROR 36
  - DESIGN MANUFACTURING 3
    CONSTRUCTION/INSTALLATION
  - DEFECTIVE PROCEDURE 21
  - OTHER 26

SUBTOTAL 86

UNCLASSIFIED

- VOLUNTARY 5
- SPECIAL REPORTS IMPROPERLY ASSIGNED LER NUMBERS 2

7

TOTAL 93

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LER BREAKDOWN BY SUBJECT - 1985 UNIT 1 ISSUED

TOTAL		93
° VOLUNTARY		5
° SPECIAL REPORTS ISSUED AS LERs		2
° REQUIRED		86
- SPURIOUS ESFAS ACTUATIONS	22	
CREFAS/RU 29/RU 30 (16)		
OTHERS (6)		
- FIRE PROTECTION MISSED SURVEILLANCES	8	
- OTHER LERs	56	

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CORRECTIVE ACTIONS TAKEN (EXAMPLE - CREFAS INITIATED LERs)

16 TOTAL IN 1985

FIRST QUARTER	6
SECOND QUARTER	4
THIRD QUARTER	4
FOURTH QUARTER	2

(IN 1986 UNITS 1 AND 2 HAD 0 TO DATE)

CORRECTIVE ACTIONS TAKEN (EXAMPLE - FIRE PROTECTION LERs)

13 TOTAL IN 1985

FIRST QUARTER	1
SECOND QUARTER	6
THIRD QUARTER	5
FOURTH QUARTER	1

(IN 1986 UNITS 1 AND 2 HAD 0 TO DATE)

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COMPLIANCE IMPROVEMENTS

- o MANAGER NAMED WITH OVERALL RESPONSIBILITY AND AUTHORITY TO CORRECT DIFFICULTIES

  - REPORT DIRECTLY TO PLANT MANAGER

- o TWO ADDITIONAL SUPERVISORS CHOSEN TO SUPPORT ORGANIZATION EXPANSION

  - EXPERIENCED HERE AT ANPP IN REPORTING AND PROCEDURAL COMPLIANCE/QA

- o ADDITIONAL STAFF BEING SELECTED TO PROVIDE ADEQUATE RESOURCES TO IMPLEMENT NEW RESPONSIBILITIES AND PROCEDURES.

- o COMPLIANCE PROCEDURAL IMPROVEMENTS

  - COMPLETE RE-WRITE OF REPORTING SYSTEM

  - INITIATION OF PROMPT EVALUATION SYSTEM

  - STREAMLINING OF REVIEW AND APPROVAL, WHILE IMPROVING TECHNICAL REVIEW AND INDEPENDENT VERIFICATION OF COMMITMENTS

- o IMPLEMENTATION OF PROJECT QUALITY INVESTIGATIVE REPORT TO IDENTIFY POTENTIAL PROBLEMS BEFORE THEY BECOME SIGNIFICANT

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SELECTED ISSUES

- AUXILIARY PRESSURIZER SPRAY SYSTEM
  (SEPTEMBER 12, 1985 EVENT)

- CHARGING PUMPS
  (FEBRUARY 18, 1986 EVENT)

- PLANT MULTIPLEXER
  (OCTOBER 3, 7, 1985 EVENTS)

- LOAD SEQUENCER
  (DECEMBER 16, 1985 EVENT)

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AUXILIARY PRESSURIZER SPRAY/CHARGING PUMPS

(GAS BINDING IN PUMPS)

- o CONCERN - LOSS OF CHARGING SYSTEM FLOW
  INCLUDING AUXILIARY PRESSURIZER
  SPRAY FLOW

- o ROOT CAUSE -
  INACCURATE VOLUME CONTROL TANK LEVEL INDICATION
  LOSS OF POWER TO VALVES 501 AND 536

- o CORRECTIVE ACTION -
  NUMEROUS HARDWARE AND PROCEDURAL CHANGES

- o UNIT 2 STATUS -
  ALL CORRECTIONS ON UNIT 1 AND ADDITIONAL
  ACTIONS TAKEN IN UNIT 2

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PVNGS UNIT 1/UNIT 2 CORRECTIVE MEASURE

- HARDWARE MODIFICATIONS
  - UPGRADED VOLUME CONTROL TANK (VCT) LEVEL INSTRUMENTATION
  - PROVIDED POWER TO VCT OUTLET VALVE 501 AND REFUELING WATER TANK GRAVITY FEED VALVE 536 FROM A 1E MCC
  - AUTO RE-ALIGNMENT OF VALVES 501 AND 536 ON LO-LO VCT LEVEL AND LOP
  - LOCK OPEN ISOLATION VALVES 532 AND 524
  - REMOVE POWER SUPPLY TO CONTAINMENT ISOLATION VALVE 524
  - ADDED PIPING TO VENT GAS FROM CHARGING PUMPS
- ADDITIONAL ACTIONS TAKEN FOR UNIT 2
  - DEMONSTRATED CAPABILITY OF RESTORING GAS BOUND CHARGING PUMPS
  - NDE INSPECTION OF CHARGING PUMP BLOCKS
- ADDITIONAL EVALUATION
  - FURTHER EVALUATION OF CHARGING SYSTEM TO ELIMINATE THE NEED FOR VENTING HYDROGEN FROM THE SUCTION OF THE CHARGING PUMPS TO BE COMPLETED BY JUNE 30, 1986

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AUXILIARY PRESSURIZER SPRAY/CHARGING PUMPS

(CHECK VALVE HELD CLOSED)

- CONCERN - LOSS OF CHARGING SYSTEM FLOW INCLUDING AUXILIARY PRESSURIZER SPRAY FLOW

- ROOT CAUSE -

  LEAKING PULSATION DAMPENER ON THE DISCHARGE OF PUMP

- CORRECTIVE ACTION -

  - WEEKLY INSPECTION FOR LEAKING BLADDER
  - REVISE OPERATIONS METHOD FOR DILUTIONS

- UNIT 2 STATUS -

  - EXAMINED VCT OUTLET CHECK VALVE

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MULTIPLEXER EVENTS

- CONCERN - UNEXPECTED LOSS OF OFFSITE POWER

- ROOT CAUSE -

  SPURIOUS SIGNAL FROM THE PLANT MULTIPLEXER CAUSING THE MAIN FEEDER BREAKERS TO OPEN

- CORRECTIVE ACTIONS -

  COMPLETELY DISABLED THE PLANT MULTIPLEXER CONTROLS TO THE BREAKERS AND HANDWIRED THE BREAKER CONTROLS FROM THE SWITCHYARD TO THE CONTROL ROOM.

- UNIT 2 STATUS -

  ALL CORRECTIVE ACTIONS IMPLEMENTED ON UNIT 2

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DECEMBER 16, 1985 EVENT

(LOAD SEQUENCER)

- CONCERN - UNEXPECTED LOAD SHED OF ESSENTIAL TRAIN A EQUIPMENT

- ROOT CAUSE -

  FAILURE OF THE SEQUENCER MODULE COOLING FAN TO KEEP THE CABINET COOL. THIS CAUSED THE SEQUENCER TO OVERHEAT AND INITIATE A FALSE SIGNAL.

- CORRECTIVE ACTIONS -

  - REPLACED FAN AND SEQUENCER BOARD. INSTALLED ANNUNICATION IN THE CONTROL ROOM TO WARN OPERATORS WHEN HIGH OUTLET AIR TEMPERATURE IS SENSED IN THE CABINET.

- UNIT 2 STATUS -

  - IMPLEMENTED CORRECTIVE ACTION ON UNIT 2.

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III. PALO VERDE UNIT 2 READINESS FOR POWER ASCENSION

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UNIT II SUMMARY

LOW POWER LICENSE - DECEMBER 9, 1985

FUEL LOAD - COMPLETED ON SCHEDULE

CURRENT STATUS/ACTIVITIES:

MODE 4 SURVEILLANCE TESTS IN PROGRESS
MODE 3 SURVEILLANCE TESTS IN PROGRESS
SECONDARY PLANT READY FOR OPERATION

PROJECTED ACTIVITIES

INITIAL CRITICALITY	MARCH 31, 1986
MODE 1 ENTRY	APRIL 9, 1986
100% POWER	JUNE 30, 1986
COMMERCIAL OPERATION	AUGUST 12, 1986

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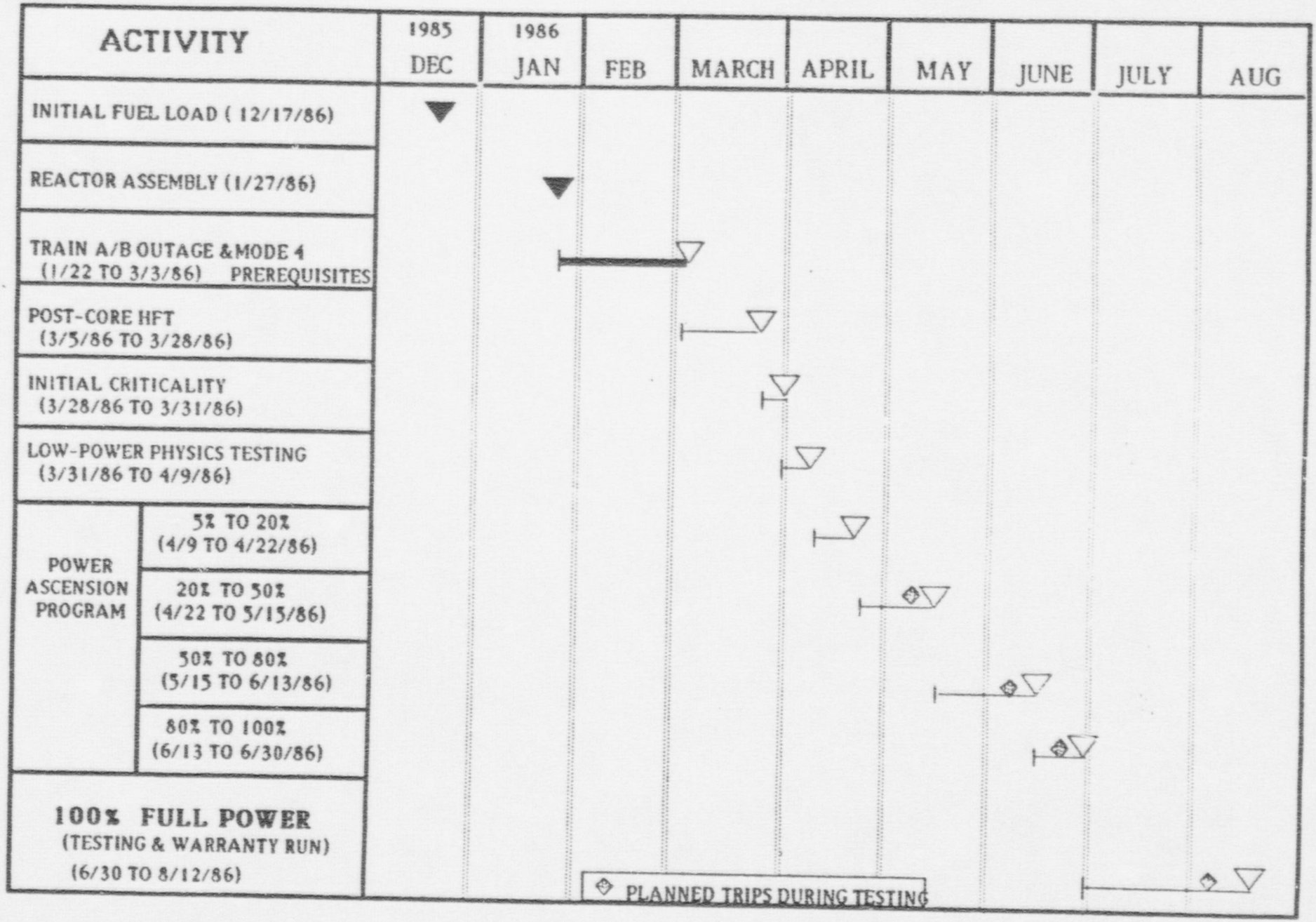
UNIT II TEST SCHEDULE



UNIT I - UNIT II DIFFERENCES

DESIGN OBJECTIVE

STANDARDIZED DESIGN

COMMITMENT TO DUPLICATE UNITS

"MULTI-UNIT" LICENSED OPERATORS

CONFIGURATION CONTROL-DESIGN CHANGE PROCESS

MAJOR DIFFERENCES

NONE

MINOR DIFFERENCES

SITE CONSTRUCTION DESIGN DIFFERENCES

SWITCHYARD BREAKER CONTROL IN UNIT I

LAUNDRY - DECON BUILDING IN UNIT I

AUXILIARY BOILER IN UNIT I

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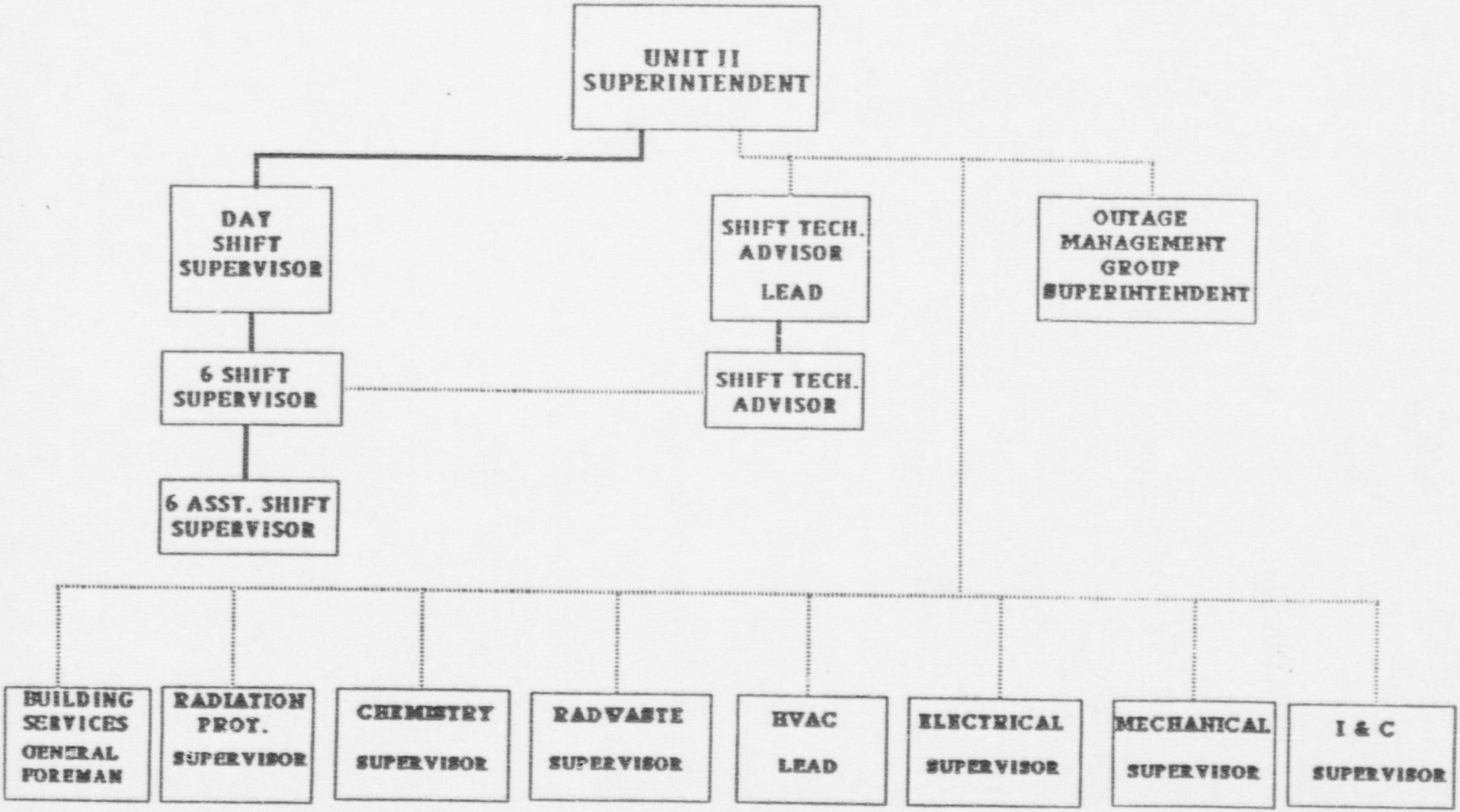
Unit 2 Staffing



UNIT II STAFFING

THE UNIT IS FULLY STAFFED

UNIT SUPPORT PERSONNEL (CHEMISTRY, MAINTENANCE, RAD PROTECTION ETC.)

UNIT PERSONNEL WITH OUTSIDE EXPERIENCE AND UNIT I EXPERIENCE

SUPPORT COVERAGE PROVIDED 24 HOURS PER DAY

SUPPORT PERSONNEL ARE UNIT SPECIFIC

THE OPERATIONS ORGANIZATION IS FULLY STAFFED

SHIFT COVERAGE MEETS NRC REQUIREMENT

OPERATIONS STAFF HAVE GAINED PREOPERATIONAL EXPERIENCE ON UNIT II

- PREOPERATIONAL HFT
- INTEGRATED SAFEGUARDS TEST
- UNIT I EXPERIENCE

OPERATIONS PERSONNEL ARE UNIT SPECIFIC

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EDWIN E. VAN BRUNT, JR. - ANPP EXECUTIVE VICE PRESIDENT

EDUCATION:

BS MECHANICAL ENGINEERING - LEHIGH UNIVERSITY - 1954

MS ENGINEERING SCIENCE, MAJOR IN NUCLEAR ENGINEERING - RENSSELAER POLYTECHNIC INSTITUTE - 1961

EXPERIENCE:

30 YEARS OF WORK AND MILITARY EXPERIENCE

28 YEARS NUCLEAR ENGINEERING, ENGINEERING AND CONSTRUCTION

PREVIOUSLY EMPLOYED BY EBASCO SERVICES, INC.

CAME TO ARIZONA PUBLIC SEVICE COMPANY IN MARCH, 1972, AND HAS BEEN RESPONSIBLE FOR ALL ENGINEERING AND CONSTRUCTION FOR PALO VERDE SINCE ITS INCEPTION.

03/06/86

JERRY G. HAYNES - VICE PRESIDENT, NUCLEAR ENGINEERING

EDUCATION:

BS MECHANICAL ENGINEERING - UNIVERSITY OF SOUTHERN CALIFORNIA - 1959
VARIOUS POST GRADUATE ENGINEERING AND MANAGEMENT COURSES

EXPERIENCE:

26 YEARS OF POWER PLANT ENGINEERING AND OPERATION EXPERIENCE.

21 YEARS OF NUCLEAR POWER PLANT ENGINEERING AND OPERATION EXPERIENCE.

PREVIOUSLY EMPLOYED BY SOUTHERN CALIFORNIA EDISON COMPANY AS STATION MANAGER AT SONGS.

CAME TO ARIZONA PUBLIC SEVICE COMPANY IN JULY, 1985 AND HAS BEEN RESPONSIBLE FOR ALL THE ENGINEERING, DESIGN, SAFETY, CONSTRUCTION, START-UP AND OPERATIONS, AND MAINTENANCE OF PVNGS.

03/06/86